

B. Ellicott Rock Reach On-River December to February

Using the data in Table 1 for backcountry angling alone, use estimates were converted to encounters using the following formula (derived from the above assumptions and relationships):

25% of angling PAOT

The results are shown in Table 3 (e.g. for peak weekends in December: $[0.25 \times 2] = 0.5$ encounters).

Table 3. Total On-River Encounters Between Backcountry Anglers For The Ellicott Rock Reach (ERR) From December Through February.

Encounters On-River (ERR)	Weekdays		Weekends	
	Average	Peak	Average	Peak
Dec	0.1	0.3	0.3	0.5
Jan	0.1	0.3	0.3	0.5
Feb	0.1	0.3	0.3	0.5

In summary, Table 2 and similar calculations in the project file were used to populate Table 3.3-4 in the EA. Also, Table 3 and similar calculations in the project file were used to populate Table 3.3-5 in the EA.

Example Calculations for Estimating Average Number of Days Encounter Limits are Exceeded in an Average Year by Existing Users

A. Protocols

Go to the encounter calculation spreadsheet in the project file. Table 2 is a subset of the on-trail portion of the encounter calculation spreadsheet, and Table 3 is a subset of the on-river portion. For the purpose of this example, both tables show only the months of December through February. The encounter calculation spreadsheet includes calculations for all 12 months of the year.

Then:

- (1) **Look first at the weekend encounter averages for a particular month.**
 - a. If weekend encounter averages are near, at or minimally above the assigned encounter limit, then assume 50% of the days represented in that month actually exceed the limit (assuming a normal distribution of encounter data), or

- b. If weekend encounter averages exceed the assigned encounter limit by 50%, then assume 75% of the days represented actually exceed the limit, or
 - c. If weekend encounter averages are less than the assigned encounter limit and within 25% of the limit, assume 25% of the days represented exceed the limit, or
 - d. If a, b and c above are not applicable, then go to step 2 below.
- (2) **Look at the peak encounter for the same month; if peak is at or above the assigned encounter limit, then assume one day exceeded.**
 - (3) **Go to the next month (until all months are completed) and repeat steps (1) and (2) above.**
 - (4) **For weekdays, follow steps (1)-(3) outlined above.**

B. Example using Alternative 4, Ellicott Rock Reach (ERR) On-Trail

Given the established encounter limits of nine on weekends and four on weekdays in Alternative 4 for the Ellicott Rock reach on-trail, and following the above protocol:

No encounter limits were estimated to be exceeded by existing users from October through March.

However, average encounters on weekends in May, June, July, August and September are within 25% of the assigned encounter limit of nine. Therefore 25% of weekend days in these months are estimated to exceed the encounter limit: $44 \text{ weekend days} * 0.25 = \underline{\underline{11 \text{ days exceed}}}$.

A peak weekend day in April exceeds the encounter limit of nine, so **one day exceeds**.

Average encounters on weekdays in June (22 days) are right at 4 total encounters, so: $22 \text{ weekdays} * 0.5 = \underline{\underline{11 \text{ days exceed}}}$.

Average encounters on weekdays in July and August are within 25% of the encounter limit of 4, so 25% of weekdays in these months are estimated to exceed the encounter limit: $44 \text{ weekdays} * 0.25 = \underline{\underline{11 \text{ days exceed}}}$.

And finally, a peak weekday in April and May exceeds the four (4) encounter limit, so **2 days exceed**.

Adding up the above days renders a total of **36 days exceeded** by existing users. This number is reported in the on-trail portion of Table 3.3-6 in the EA (in the Environmental Consequences section under Alternative 3).

Similar calculations were performed for the Ellicott Rock reach on-river and for the other three reaches, on-trail and on-river. See project file.

Assumptions about Boater-Generated Encounters

Boating group sizes: four boaters per group on average when the number of groups per day is unlimited (based on Vagias 2006 analysis of Section 4 private boating use).

Average number of days per year boaters would float the river (boatable days) are estimated by using the prescribed mean daily flow (MDF) and season of use for the alternative in question (e.g.: in Alternative 4, flow levels of approximately 450 cfs or higher between December 1 and March 1 occur on six days in an average year (Hansen 2007)). See definition of boatable day in Appendix C.

The following two assumptions about boatable days are taken directly from page 37 of Whittaker and Shelby (2007):

1. About 1/2 of the boatable days are ideal⁴ and would have predictable flows that can be used by regional boaters. About 1/3 of these days would occur on weekends and might approach peak weekend maximums as described in Whittaker and Shelby (2007), page 36-37. The remaining ideal days might approach weekday maximum use levels as described in Whittaker and Shelby (2007), page 36-37.
2. The other half of the boatable days would have less predictable flows and might have about half the use of ideal weekdays.

On-trail on boatable days, assume that the percentage of boating groups (estimated for that day) encountered by existing backcountry trail users is directly related to the percentage of trail miles within 100 feet of the river in the reach in question (independent of water levels, season or time of year, inclement weather and/or temperatures). For example, 24% of total trail miles within the Ellicott Rock reach are within 100 feet of the river, therefore 24% of the estimated boating groups for a particular day would be encountered by existing trail users on-trail. Also reference Whittaker and Shelby (2007, p.61-62) for additional rationales for this assumption.

On-river on boatable days, assume existing users (primarily anglers) will encounter an average of 75% of boating groups that are estimated to be on the river on that day. Existing users are not expected to encounter every boating group because: (1) the higher flows necessary for boating generally make the reach more challenging to access and wade (while some stretches are made totally inaccessible); (2) more care is required to wade at the higher flows; (3) greater energy is necessary to stand in the river which may ultimately result in anglers spending less time fishing over the course of the day (Berger 2007c), and (4) geography and timing can also interact to affect the likelihood of

⁴ "Ideal Conditions" are defined near the bottom of page 36 in Whittaker and Shelby 2007

encounters (Whittaker and Shelby 2007). Alternately, the 75 percent encounter average is assumed to be constant, independent of flow, season, or weather conditions.

Example Calculations for Estimating Boater Generated Encounters under Alternative 4

A. Ellicott Rock Reach On-Trail – Alternative 4

The months of December through February generate six boatable days in an average year (with a prescribed mean daily flow of 450 cfs or higher). Based on the above assumptions, of those days:

Approximately half (three) are ideal and have predictable flows:

- About 1/3 of those ideal days, or one day, **falls on a weekend**. Based on Whittaker and Shelby (2007) page 36, an ideal weekend day in the Ellicott Rock reach would attract 70 boaters. Based on the assumption that boating group size would be comprised of an average of four boaters, this equates to 18 boating groups per day (70/4). The 18 groups would in turn generate **four encounters** (18 * 0.24) based on 24% of trails in the Ellicott Rock reach being within 100 feet of the river;
- The two remaining ideal days **fall on weekdays**. An ideal weekday would attract 20 boaters or five groups per day (20/4). The five groups per day would in turn generate **one encounter** (5 * 0.24);

The other three of the six boatable days in an average year are less predictable/usable and have about half the use of ideal weekdays. Therefore:

- One **weekend day** with about half the use of ideal weekdays in the Ellicott Rock reach would attract about ten boaters or three groups per day (10/4). The three groups per day would in turn generate **one encounter** (3 * 0.24);
- Finally, **two weekdays** would have about half the use of ideal weekdays and would attract about ten boaters or three groups per day (10/4). The three groups per day would in turn generate **one encounter** (3 * 0.24).

APPENDIX D

The average number of on-trail encounters generated by boaters within the Ellicott Rock reach in Alternative 4 is calculated as follows:

1 ideal weekend day with 4 encounters =	4 encounters
2 ideal weekdays with 1 encounter ea =	2 encounters
1 weekend day with 1 encounter =	1 encounter
+ <u>2 weekdays with 1 encounter each =</u>	<u>2 encounters</u>
6 days generate	9 encounters
or an average of	<u>1.5 encounters/day</u> (9/6)

The average of 1.5 encounters per day on-trail (on six days/year) for Alternative 4 in the Ellicott Rock reach is reported in Table 3.3-7 of the EA.

B. Ellicott Rock Reach On-River – Alternative 4

On-river encounters are calculated in the same way as on-trail calculations, the only exception being that a factor of 0.75 (75%) is used instead of 0.24 (24%) in the above example for the Ellicott Rock reach. The results are as follows:

The months of December through February generate six boatable days in an average year (with a prescribed mean daily flow of 450 cfs or higher). Based on the above assumptions, of those days:

Approximately half, or three, are ideal and have predictable flows:

- About 1/3 of those ideal days, or one, falls on a weekend that attracts 18 boating groups per day, which in turn generates 14 encounters ($18 * 0.75$);
- The two remaining ideal days fall on weekdays that attract five groups per day, which in turn generate four encounters ($5 * 0.75$).

The other half of the six boatable days in an average year are less predictable/usable and have about half the use of ideal weekdays. Therefore:

- One weekend day with about half the use of ideal weekdays would attract about three groups per day and in turn generate two encounters ($3 * 0.75$);
- Finally, two weekdays would have about half the use of ideal weekdays and would attract three groups per day and generate two encounters ($3 * 0.75$).

The average number of on-river encounters generated by boaters within the Ellicott Rock reach in Alternative 4 is calculated as follows:

1 ideal weekend day with 14 encounters =	14 encounters
2 ideal weekdays with 4 encounters ea =	8 encounters
1 weekend day with 2 encounters =	2 encounters
+ 2 weekdays with 2 encounters each =	4 encounters
6 days generate	28 encounters
or an average of	<u>4.7 encounters/day</u> (28/6)

The average of 4.7 encounters per day on-river (on 6 days/year) for Alternative 4 in the Ellicott Rock reach is reported in Table 3.3-7 in Chapter 3 of the EA.

Example Calculations for Estimating Average Number of Days Encounter Limits are Exceeded in an Average Year by Boaters

A. Protocols

Go to the encounter calculation spreadsheet in the project file. Table 2 is a subset of the on-trail portion of the encounter calculation spreadsheet, and Table 3 is a subset of the on-river portion. For the purpose of this example both tables show only the months of December through February. The encounter calculation spreadsheet includes calculations for all 12 months of the year.

Examine the applicable average encounters on weekend and weekdays per month and round to whole numbers. The exception is on-river in the Chattooga Cliffs reach and on-river December through February in the Ellicott Rock reach where there are not enough anglers to generate one encounter independent of boaters. In those cases, round down to zero encounters generated by existing users.

Add boater-generated encounters per day to the existing user encounter estimates on the applicable days per month (in the encounter calculation spreadsheet), unless existing user encounters have already exceeded encounter limits. Boater-generated encounters were allocated to specific months based on the proportion of optimal boating days per month (see Whittaker & Shelby 2007 for definition of optimal boating days).

- If the sum is approximately the same as the encounter limit, then assume that 50% of boatable days will exceed the encounter limits (assumes a normal distribution).
- If the sum notably exceeds the encounter limit, all boatable days contribute to exceeding the encounter limits.

B. Example using Alternative 4, Ellicott Rock Reach (ERR) On-Trail

There is an established on-trail encounter limit in the ERR of nine on weekends and four on weekdays.

Go to the encounter calculation spreadsheet (or Table 2):

Table 2. Total On-Trail Encounters Between Existing Users (Hikers, Backpackers And Backcountry Anglers) For The Ellicott Rock Reach (ERR) From December Through February.

Total Encounters	Weekdays		Weekends	
On-Trails (ERR)	Average	Peak	Average	Peak
Dec	0.9	1.8	1.8	2.0
Jan	0.9	1.8	1.8	2.0
Feb	0.9	1.8	1.8	3.5

Using the boater generated encounters (for Alternative 4 – Ellicott Rock reach – on-trail) estimated earlier in this document:

- 1 ideal weekend day with **4 encounters**
- 2 ideal weekdays with **1 encounter** each
- 1 weekend day with **1 encounter**
- 2 weekdays with **1 encounter** each

Add the four boater generated encounters on the ideal weekend day above to the two encounters generated by existing users on a weekend day (Table 2): $4 + 2 = 6$

The total of 6 encounters does not exceed the weekend encounter limit of nine on weekends. So in this case boats do not cause on-trail encounter limits to be exceeded on the one ideal weekend day in the Ellicott Rock reach.

The same process is applied to the two ideal weekdays, one weekend day, and two weekdays above where boaters generate encounters. Since the encounters generated by boaters on all of these days are less than four, none of these causes encounter limits to be exceeded.

Therefore, under Alternative 4 in the ERR, there are zero days on which boats are expected to cause on-trail encounter limits to be exceeded. This is also reported in Table 3.3-7 of the EA.

C. Example using Alternative 4, Ellicott Rock Reach (ERR) On-River

There is an established encounter limit of six on weekends and weekdays in the ERR on-river.

Go to the encounter calculation spreadsheet (or Table 3):

Table 3. Total On-River Encounters between Backcountry Anglers for the Ellicott Rock Reach (ERR) from December through February.

Encounters On-River (ERR)	Weekdays		Weekends	
	Average	Peak	Average	Peak
Dec	0.1	0.3	0.3	0.5
Jan	0.1	0.3	0.3	0.5
Feb	0.1	0.3	0.3	0.5

Using the boater generated encounters (for Alternative 4 – Ellicott Rock reach – on-river) estimated earlier in this document:

- 1 ideal weekend day with **14 encounters**
- 2 ideal weekdays with **4 encounters each**
- 1 weekend day with **2 encounters**
- 2 weekdays with **2 encounters each**

Add the 14 boater-generated encounters on the one ideal weekend day above to the zero encounters generated by existing users on a weekend day (Table 3): $14 + 0 = 14$

The total of 14 encounters exceeds the on-river encounter limit of six on one weekend day in the Ellicott Rock reach.

The same process is applied to the two ideal weekdays (four encounters each), one weekend day and two weekdays where boaters generate encounters. Since the encounters generated by boaters when combined with those generated by existing users (zero encounters) are less than six, none of these causes encounter limits to be exceeded.

Therefore, under Alternative 4, boats cause on-river encounter limits to be exceeded on only one day in the Ellicott Rock reach. This is also reported in Table 3.3-7 of the EA.

APPENDIX E

APPENDIX E – All Rare Wildlife Species Listed on the CONF, NNF and SNF

TYPE	SCIENTIFIC NAME	COMMON NAME	HABITAT/RANGE	FOREST	LISTING	ANALYZED / REASON ¹
Mammal	<i>Glaucomys sabrinus coloratus</i>	Carolina Northern Flying Squirrel	High elevation forests, mainly spruce-fir	NNF	E	No / 4
Mammal	<i>Myotis sodalis</i>	Indiana Bat	Roots in hollow trees or under loose bark (warmer months), in caves (winter).	NNF	E	No / 3
Mammal	<i>Puma concolor cougar</i>	Eastern Cougar	Extensive forests, remote areas	NNF CONF SNF	E	No / 5
Reptile	<i>Clemmys muhlenbergii</i>	Bog Turtle	Bogs, wet pastures, wet thickets	NNF	T (S/A)	No / 4
Spider	<i>Microhexura montivaga</i>	Spruce-fir Moss Spider	In moss of spruce-fir forests (endemic to North Carolina and adjacent Tennessee)	NNF	E	No / 4
Terrestrial Gastropod	<i>Patera clarki nantahala</i>	Noonday Globe	Nantahala Gorge (endemic to this site)	NNF	T	No / 3
Amphibian	<i>Desmognathus santeetlah</i>	Santeetlah Dusky Salamander	stream headwaters and seepage areas; southwestern mountains	NNF	S	No / 4
Amphibian	<i>Eurycea junaluska</i>	Junaluska Salamander	Forests near seeps and streams in the southwestern mountains	NNF	S	No / 3
Amphibian	<i>Plethodon aureolus</i>	Tellico Salamander	Forests in the Unicoi Mountains	NNF	S	No / 3
Amphibian	<i>Plethodon teyahalee</i>	Southern Appalachian Salamander	moist forests, in southwestern mountains at all elevations	CONF NNF SNF	S	Yes / 1
Beetle	<i>Cicindela ancoclisconensis</i>	Appalachian Tiger Beetle	Habitat specialist preferring sand and cobble along permanent streams or grassy openings , above 4000 feet	CONF NNF	S	No / 4
Beetle	<i>Cicindela patruela</i>	A Tiger Beetle	Sandy soil in open pine or pine-oak woods	CONF	S	No / 4
Beetle	<i>Trechus luculentus uncoi</i>	A ground beetle	Beneath rocks and moss in wet ravines and near seeps and springs	NNF	S	No / 3
Beetle	<i>Trechus rosenbergi</i>	A ground beetle	Deep in mat of spruce and fir needles piled up against wet, vertical rock faces, Plott Balsam and Great Balsam Mountains	NNF	S	No / 4
Bird	<i>Aimophila aestivalis</i>	Bachman's Sparrow	Dry, open, pine or oak woods with well developed herb layer	CONF	S	No / 4
Bird	<i>Falco peregrinus</i>	Peregrine Falcon	Cliffs (for nesting)	CONF NNF	S	No / 4
Bird	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Mature forests near large bodies of water (for nesting)	CONF NNF SNF	S	No / 4
Bird	<i>Lanius ludovicianus migrans</i>	Migrant Loggerhead Shrike	Fields and pastures (breeding season only)	CONF NNF	S	No / 4
Bird	<i>Thryomanes bewickii altus</i>	Appalachian Bewick's Wren	Woodland borders or openings, farmlands or brushy fields, at high Elevations (breeding season only)	NNF	S	No / 4
Butterfly	<i>Callophrys irus</i>	Frosted Elfin	Open woods and borders, usually in dry situations; host plant-lupines (<i>Lupinus</i>) and wild indigos (<i>Baptisia</i>)	NNF	S	No / 4
Butterfly	<i>Speyeria diana</i>	Diana Fritillary	Rich woods and adjacent edges and openings; host plants violets (<i>Viola</i>), Pine Forests	CONF NNF SNF	S	No / 2
Grass-hopper	<i>Melanoplus divergens</i>	Divergent Melanoplus	Glades and balds, 1800-4717 feet	NNF	S	No / 4
Grass-hopper	<i>Melanoplus serrulatus</i>	Serrulate Melanoplus	Valleys and lower slopes, Nantahala Mountains	NNF	S	No / 3

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TYPE	SCIENTIFIC NAME	COMMON NAME	HABITAT/RANGE	FOREST	LISTING	ANALYZED / REASON ¹
Grass-hopper	<i>Scudderella septentrionalis</i>	Northern Bush Katydid	Woodlands	NNF	S	No / 4
Grass-hopper	<i>Trimerotropis saxatilis</i>	Rock-loving Grasshopper	Boulderfields	NNF	S	No / 4
Mammal	<i>Microtus chrotorrhinus carolinensis</i>	Southern Rock Vole	Rocky areas at high elevations, forests, or fields	NNF	S	No / 4
Mammal	<i>Myotis austroriparius</i>	Southeastern Bat	Standing snags, hollow trees and buildings	CONF	S	No / 4
Mammal	<i>Myotis leibii</i>	Eastern Small-footed Bat	Roosts in hollow trees, rock outcrops, bridges (warmer months), in caves and mines (winter)	CONF NNF SNF	S	No / 2
Mammal	<i>Sorex palustris punctulatus</i>	Southern Water Shrew	Stream banks in montane forests or northern hardwood forests above 3000 ft.	CONF NNF	S	No / 4
Mammal	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	Roosts in old buildings, hollow trees, caves, mines, and beneath bridges, usually near water	CONF NNF SNF	S	No / 2
Moth	<i>Euchlaena milnei</i>	Milne's Euchlaena	Hardwood forest and riparian areas in mountains	NNF	S	No / 2
Moth	<i>Semiothisa fraserata</i>	Fraser Fir Angle	spruce/fir forests with fraser fir	NNF	S	No / 4
Reptile	<i>Clemmys muhlenbergii</i>	Bog Turtle	Bogs, wet pastures, wet thickets	CONF	S	No / 4
Spider	<i>Nesticus cooperi</i>	Lost Nantahala Cave Spider	Caves and along Nantahala River (apparently endemic to Swain County, NC)	NNF	S	No / 3
Spider	<i>Nesticus sheari</i>	a nesticid spider	on the ground in moist or rich forests (apparently endemic to Graham County, NC)	NNF	S	No / 4
Spider	<i>Nesticus silvanus</i>	a nesticid spider	Habitat not indicated (apparently endemic to southern mountains of NC)	NNF	S	Yes / 1
Terrestrial Gastropod	<i>Pallifera hemphilli</i>	Black Mantleslug	High elevation forest, mainly spruce-fir	NNF	S	No / 4
Terrestrial Gastropod	<i>Paravitrea placentula</i>	Glossy Supercoil	Leaf litter on wooded hillsides	NNF	S	No / 3
Amphibian	<i>Ambystoma talpoideum</i>	Mole Salamander	Breeds in fish-free semipermanent woodland ponds; forages in adjacent woods	NNF	LR	Yes / 1
Amphibian	<i>Aneides aeneus</i>	Green Salamander	Damp, shaded crevices of cliffs or rock outcrops in deciduous forests (southern forests)	CONF NNF	LR	Yes / 1
Amphibian	<i>Eurycea longicauda longicauda</i>	Longtail Salamander	Moist woods and floodplains; small ponds for breeding	NNF	LR	No / 3
Amphibian	<i>Hemidactylium scutatum</i>	4-toed Salamander	Pools, bogs and other wetlands in hardwood forests	CONF	LR	No / 4
Bird	<i>Accipiter striatus</i>	Sharp-shinned hawk	Forests and Woodlands	NNF	LR	No / 3
Bird	<i>Aegolius acadicus pop. 1</i>	Northern Saw-whet Owl	Spruce-fir forests or mixed hardwood/spruce forests (for nesting) [breeding season only]	NNF	LR	No / 4
Bird	<i>Bombycilla cedrorum</i>	Cedar Waxwing	Hardwood, pine forest / woodland (breeding season only)	CONF	LR	No / 4
Bird	<i>Catharus guttatus</i>	Hermit Thrush	Spruce-fir forests (for nesting) [breeding season only]	NNF	LR	No / 4
Bird	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	Deciduous forests, mainly at higher elevations [breeding season and habitat only]	NNF	LR	No / 4

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TYPE	SCIENTIFIC NAME	COMMON NAME	HABITAT/RANGE	FOREST	LISTING	ANALYZED / REASON ¹
Bird	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Montane conifer forests (mainly spruce-fir) with openings or dead trees [breeding season only]	NNF	LR	No / 4
Bird	<i>Corvus corax</i>	Common Raven	High elevation, remote cliffs and rock outcrops	CONF	LR	No / 4
Bird	<i>Dendroica cerulea</i>	Cerulean Warbler	Mature hardwood forests; steep slopes and coves in mountains [breeding season only]	NNF CONF	LR	No/ 2
Bird	<i>Dendroica magnolia</i>	Magnolia Warbler	Spruce-fir forests, especially in immature stands [breeding season only]	NNF	LR	No / 4
Bird	<i>Empidonax alnorum</i>	Alder flycatcher	High elevation, shrub/sapling thicket	NNF	LR	No / 4
Bird	<i>Empidonax minimus</i>	Least Flycatcher	Open hardwood forests, groves, streamside trees (breeding season only)	CONF	LR	No/ 2
Bird	<i>Empidonax traillii</i>	Willow Flycatcher	Wet thickets, streamside, riparian areas (breeding season only)	CONF	LR	No/ 2
Bird	<i>Loxia curvirostra</i>	Red Crossbill	Pine and pine / oak forests and woodlands (breeding season only)	CONF	LR	No / 4
Bird	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	Hardwood forests at mid-to high elevations (breeding season only)	CONF	LR	No / 4
Bird	<i>Regulus satrapa</i>	Golden-crowned Kinglet	Mixed pine / hardwood forests at mid-to high elevations (breeding season only)	CONF	LR	No / 4
Bird	<i>Shyrapicus varius appalachiensis</i>	Appalachian Yellow-bellied Sapsucker	Mature, open hardwoods with scattered dead trees [breeding season only]	NNF	LR	No/ 2
Bird	<i>Sitta canadensis</i>	Red-breasted Nuthatch	Mixed conifer and hardwood forest and woodland (breeding season only)	CONF	LR	No/ 2
Bird	<i>Troglodytes troglodytes</i>	Winter Wren	Mixed conifer and hardwood forest and woodland at mid to high elevations (breeding season only)	CONF	LR	No / 4
Bird	<i>Vermivora chrysoptera</i>	Golden-winged Warbler	Old fields, woodlands and hardwood successional forests (breeding season only)	CONF	LR	No / 4
Bird	<i>Vermivora pinus</i>	Blue-winged Warbler	Low elevation brushy fields and thickets	NNF	LR	No / 4
Bird	<i>Vireo gilvus</i>	Warbling Vireo	Scattered hardwoods in open country [breeding season only]	NNF	LR	No / 4
Bird	<i>Wilsonia canadensis</i>	Canada Warbler	Shrub thickets in riparian areas, second growth deciduous hardwoods (breeding season only)	CONF	LR	No / 4
Butterfly	<i>Autochton cellus</i>	Golden-banded Skipper	Moist woods near streams; host plant-hog peanut (<i>Amphicarpa bracteata</i>)	NNF	LR	No/ 2
Butterfly	<i>Chlosyne gorgone</i>	Gorgone Checkerspot	Woodland Openings and borders	NNF	LR	No / 4
Butterfly	<i>Celastrina niger</i>	Dusky Azure	Rich, moist deciduous forests; host plant-goat's beard (<i>Aruncus dioicus</i>)	NNF	LR	No/ 2
Butterfly	<i>Euphydryas phaeton</i>	Baltimore Checkerspot	Bogs, marshes, wet meadows, rarely upland habitat, host plants turtle hrad (Chelone) and false foxglove (Aureolaria)	NNF	LR	No / 4
Butterfly	<i>Papilio cresphontes</i>	Giant Swallowtail	Primarily coastal in maritime forests or thickets	NNF	LR	No / 4
Butterfly	<i>Phyciodes batesii maconensis</i>	Tawny Crescent	Rocky ridges, woodland openings, at higher elevations; host plants- Asters, mainly <i>Aster undulatus</i>	NNF	LR	No / 4
Butterfly	<i>Polygonia progne</i>	Gray comma	Rich deciduous woods	NNF	LR	No / 3
Butterfly	<i>Satyrion edwardsii</i>	Edward's Hairstreak	Xeric oak woods , host plants oaks	NNF	LR	No / 4
Butterfly	<i>Erora laeta</i>	Early Hairstreak	Deciduous forests, especially along roads or edges at high elevations	NNF	LR	No / 4

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TYPE	SCIENTIFIC NAME	COMMON NAME	HABITAT/RANGE	FOREST	LISTING	ANALYZED / REASON ¹
Fly	<i>Eulonchus marialiciae</i>	Mary Alice's Small-headed Fly	High-elevation hardwood – hemlock forests	NNF	LR	No / 4
Grasshopper	<i>Melanoplus cherokee</i>	Cherokee Melanoplus	Woodlands, 1800-5100 feet	NNF	LR	No / 4
Grasshopper	<i>Melanoplus viridipes eurycerus</i>	Green-legged Melanoplus	Woodlands and forest edges	NNF	LR	No / 4
Grasshopper	<i>Melanoplus acrophilus acrophilus</i>	A short-winged Melanoplus	Shrubby areas, 3600-5000 feet elevation	NNF	LR	No / 4
Mammal	<i>Condylura cristata</i>	Star – nosed mole	Forested wetlands, bogs/fens and swamps	CONF	LR	No / 4
Mammal	<i>Mustela nivalis</i>	Least Weasel	Mixed hardwood pine grassy upland and riparian woodland, grassland	CONF	LR	No / 4
Mammal	<i>Neotoma floridana haematoresia</i>	Eastern Woodrat – Southern Appalachian Pop.	Rocky places in deciduous or mixed forests	CONF	LR	Yes / 1
Mammal	<i>Neotoma magister</i>	Allegheny woodrat	Rocky places and abandoned buildings in deciduous or mixed forests in the northern mountains and adjacent Piedmont.	NNF	LR	No / 3
Mammal	<i>Sorex dispar</i>	Long-tailed Shrew	High elevation forests with talus or rocky slopes	CONF NNF	LR	No / 4
Mammal	<i>Sylvilagus obscurus</i>	Appalachian cottontail	High elevation balds and shrub thickets	CONF	LR	No / 4
Mammal	<i>Tamiasciurus hudsonicus</i>	Red Squirrel	Mixed conifer and hardwood forest and riparian areas	CONF	LR	No / 2
Moth	<i>Hepialus sciophanes</i>	a ghost moth	Spruce-fir forests	NNF	LR	No / 4
Moth	<i>Itame subcessaria</i>	Barred Itame	High elevation forests with gooseberries	NNF	LR	No / 4
Reptile	<i>Eumeces anthracinus</i>	Coal Skink	Rocky slopes, wooded hillsides and roadbanks	CONF	LR	Yes / 1
Reptile	<i>Pituophis m. melanoleucus</i>	Northern Pine Snake	Dry and/or sandy pine/oak uplands	CONF	LR	Yes / 1
Reptile	<i>Sternotherus minor</i>	Loggerhead Musk Turtle	Streams and rivers in Mississippi drainage	NNF	LR	No / 3
Spider	<i>Nesticus species nova 1</i>	A nesticid spider	Talus fields, known only from a five mile radius on the northern end of Chunky Gal Mountain	NNF	LR	No / 3
Spider	<i>Nesticus species nova 2</i>	A nesticid spider	Rocky talus fields along the Chattooga River and rock crevices of Whiteside Mountain	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Glyphyalinia junaluskana</i>	Dark Glyph	Moist leaf litter in deciduous woods on mountainsides	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Glyphyalinia pentadelphica</i>	Pink Glyph	Pockets of moist leaves in upland woods	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Haplotrema kendeighi</i>	Blue-footed Lancetooth	Mountainsides in leaf litter, usually above 2000 feet elevation	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Helicodiscus bonamicus</i>	Spiral Coil	Leaf litter on wooded hillsides	NNF	LR	No / 3
Terrestrial Gastropod	<i>Helicodiscus fimbriatus</i>	Fringed Coil	Leaf litter and under rocks on wooded hillsides	NNF	LR	No / 3
Terrestrial Gastropod	<i>Appalachina chillhoweensis</i>	Queen Crater	Under leaf litter or in rock piles	NNF	LR	No / 3
Terrestrial Gastropod	<i>Patera clarki</i>	Dwarf Proud Globe	Under leaf litter on wooded mountainsides	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Inflectarius ferrissi</i>	Smoky Mountain Covert	Under rock ledges, in rock piles, under downed logs at elevations above 2000 feet; Great Smokey Mountains and Plott Balsams	NNF	LR	No / 3
Terrestrial Gastropod	<i>Fumonilex orestes</i>	Engraved Covert	In crevices in rock ledges; high elevations in the Plott Balsam Mountains	NNF	LR	No / 3

APPENDIX E

TYPE	SCIENTIFIC NAME	COMMON NAME	HABITAT/RANGE	FOREST	LISTING	ANALYZED / REASON ¹
Terrestrial Gastropod	<i>Paravitrea lacteodens</i>	Ramp Cove Supercoil	Habitat unknown-probably leaf litter on mountainsides	NNF	LR	No / 3
Terrestrial Gastropod	<i>Paravitrea lamellidens</i>	Lamellate Supercoil	Pockets of deep, moist leaf litter on wooded hillsides or in ravines	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Paravitrea umbilicatus</i>	Open Supercoil	Pockets of deep, moist leaf litter on wooded hillsides or in ravines	NNF	LR	Yes / 1
Terrestrial Gastropod	<i>Zonitoides patuloides</i>	Appalachian Gloss	Pockets of deep, moist leaves on mountainsides and in ravines	NNF	LR	Yes / 1

1 = suitable habitat for the species occurs in the analysis area and this species could potentially be impacted by one or more alternatives in this analysis; therefore, species is analyzed in project – level effects analysis; 2 = Dropped - = suitable habitat for the species occurs in the analysis area, but this proposal does not include management actions which would affect this species; 3 = Dropped – the analysis area is outside of the Known or Suspected Range of the Species (only includes nesting range for birds); therefore, species is dropped from further analysis; 4 = Dropped – Within Range, but no suitable habitat in the analysis area; therefore, species is dropped from further analysis; 5 = Dropped – the best available science indicates this species is extirpated.

APPENDIX E

APPENDIX F – Map of the Chattooga Wild and Scenic River Corridor

Please see separate file Appendix F Chattooga W&S River Corridor.pdf

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